1: Hocart Y-5 (ca. 1920) 1929 OQ6 Lau OQ6
Lakemba

342 574 (*i yau*) are given to the workers when they come down, called *vakevu* (to bring down); but in Lakemba there is only a feast, consisting of grated pudding and pig. Another similar feast is made for the walls.

342 When the house has been strewn with grass and mats kava is made, but no feast. This is called "spitting on the mats" (*kanusivi tambakau*), or "spitting on the house" (*kanusi vale*). There is no spitting.

An informant says:

342 643 565 House-building now is a poor affair compared with what it used to be. Of old the whole of Lakemba would come to build the Tui Naiau's house. Villages would work for a nobleman who was connected with them. If a man of Tumbou wished to have a house built he would carry a feast to the chief with his request; the chief would assign a certain village to build the house; of course the man had to feed them.

342 565 The side of the house towards the sea was called the noble side (*yasa turanga*), and with it went the east end, or, if the house were perpendicular to the seashore, the east side was the noble one, and with it went the sea end. If Tumbou village alone were building, Katumbalevu would work on the noble side, and Valelailai on the end that goes with it; in house-building Valelailai goes with Katumbalevu, that is why they are joined together as Tai; Tumbou quarter would divide the other side and end.

If the whole of Lakemba were building, the Town took the noble side; Wathiwathi and Waitambu would take the east end on account of Wathiwathi; Natokalau took the other side and end, Nasangalau and Nukunuku taking the side, Yandrana and Vakano the end. If Natokalau alone were working Nasangalau took the noble side, Nukunuku the sea end, Yandrana the common side, and Vakano the land end. It was forbidden for the commoners (*kairi*) to tie their thatch higher than the top reeper until the nobles had tied theirs so as to inaugurate it (*sevu*) up to the top. The other side could then be finished.

342 574 Should Natokalau be building a house in Tumbou, Navuaira would make a feast for them, and then attend to their own affairs; or if Navuaira were building, Natokalau made the feast.

Canoe Building and Its Ceremonies

501 Almost all the canoes in Lau are dug-outs, and all carry outriggers. Lemaki told me of small plank canoes (*wangga yonovono*) 3 or 4 fathoms long, introduced by his family, but I did not see any. There are three grades of dug-out canoes: paddling canoe (*wangga vothe*); sailing canoe, called beam float (*thamakau*) in opposition to the third kind, the double canoe (*ndrua*), which for outrigger has a smaller canoe and which was built on a keel of two boards. The paddling canoe alone is common; the others being superseded by the cutter, only one of each surviving in Lau in 1910.

The paddling canoe (Pl. III, *D*) is used in smooth water only, either inside or outside the reef. It is punted in shallow water and paddled in deep, and can be sailed in calm waters.

396 The sailing canoe (Pl. III, *C*) is larger, more stoutly built, with high wash strakes, and is decked fore and aft. Figures 9 and 10 show the con-

1: Hocart Y-5 (ca. 1920) 1929 · OQ6 Lau OQ6
Lakemba

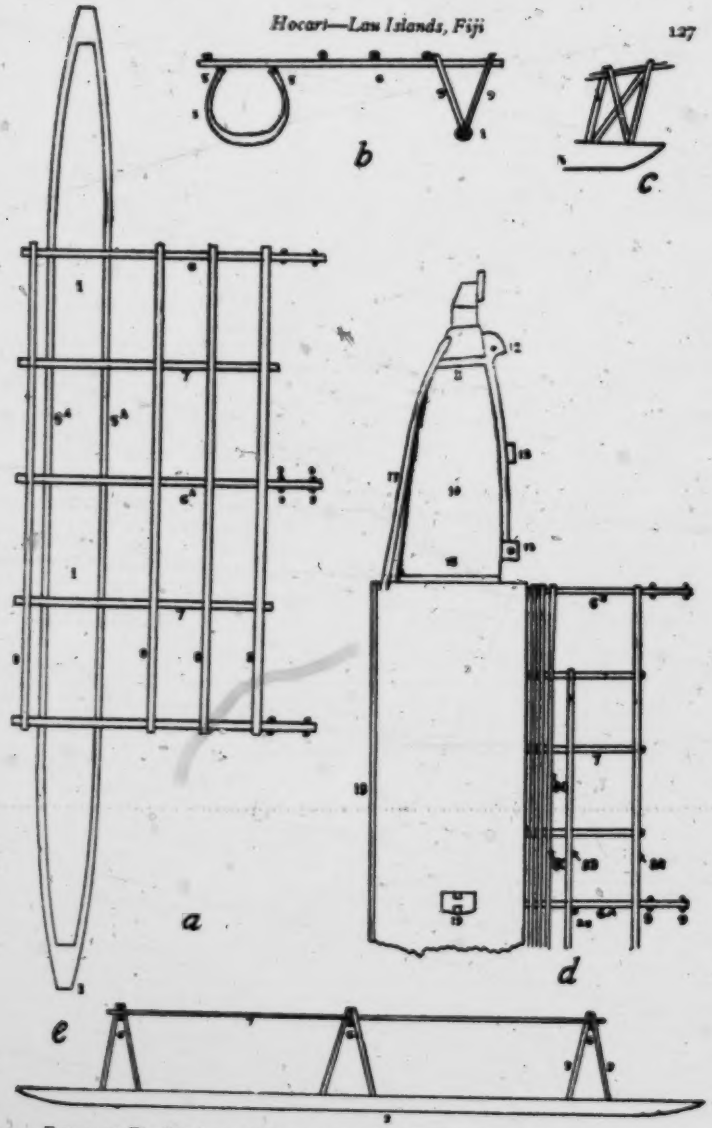

FIGURE 9.—The Kandavu sailing canoe: *a*, plan; *b*, cross section; *c*, attachment of outrigger; *d*, plan of sailing canoe; 1, hull; 2, float (*thama*); 3, bow; 4, stern; 5, washtrake (*isca*); 6, 6A, principal outrigger booms (*ikaso tu*); 7, short outrigger booms (*ikaso leka*); 8, outrigger crosspieces; 8A, B, C, *ravuniua*, *ivakosonindoko*, *isuasua*, spars; 9, float sticks (*ivatoto*); 10, fore deck; 11, emplacement of the point of the sail (*i tutu ni cu*); 12, *mbaserisei*; 13, *sau*; 14, main deck (*rara*); 15, *latitumbu*; 16, *tavia*; 17, *ivasvandava*; 18, railing (*mbaniua*); 19, step (*vungakoto*); 20, mast; 21, *roko*; 22, cleat (*tekc*); 23, bow stay (*uthuimua*).

1: Hocart Y-5 (ca. 1920) 1929 OQ6 Lau OQ6
Lakemba

346 struction of a canoe seen at Soso in Kandavu. The hull is made of Fijian *kauri* or of greenheart. The lower end of the masthead is levelled and lashed to the mast; two stays called *tu ruarua* (I use the Kandavu terms) are fastened to the joint; the other end of one is lashed to the outmost spar, the end of the other to the lee side; one single stout stay called *tu ruarua* runs from the blocks (*i sandali*) on the masthead to the central outrigger boom and the outer float sticks. Two stays also run from the base of the masthead to the further blocks on the weather side of the canoe

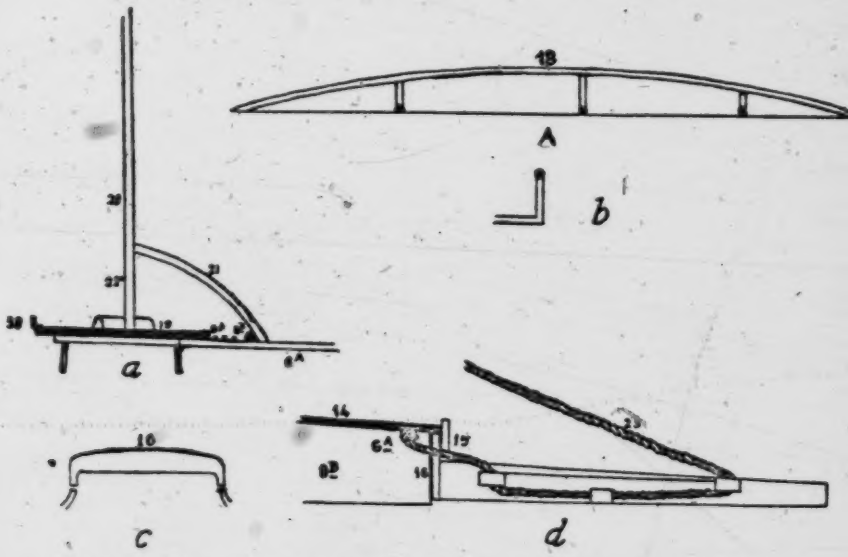

FIGURE 10.—The Kandavu canoe: *a*, mast; *b*, railing and detailed section; *c*, section of the fore deck; *d*, longitudinal view of the fore deck.

fore and aft, then back through two more blocks to the outer outrigger booms. The spaces (*ndungundungu*) under the fore and aft decks are almost completely partitioned off from the main hold (*ndreke*). The hold is partly covered by a platform on which a small hut may be erected. In larger canoes these become regular deck cabins which have flat roofs known as the sail shelf.

396 574 Large double canoes are spoken of as sacred canoes (*wangga tambu*). Any one can cut a dug-out paddling canoe and without ceremony, but large canoes are put into hands of carpenters, this entails feasts at various stages of the construction.

1: Hocart Y-5 (ca. 1920) 1929 OQ6 Lau OQ6
Lakemba

First, when Roko Sau ordered a "net of the dead," (p. 183) or some such large canoe he would prepare gifts which were known as *mbutambuta*, amounting perhaps to a hundred whale's teeth, two to ten rolls of coir rope, and so forth; sometimes a woman was given. A nobleman was sent to Kambara to provide food for the carpenters; he would go to Vulanga and other islands to collect food. While the work was in progress it was forbidden to step over the boards under a fine. When the keel was laid down (*utu a takele*) a feast amounting to as many as a hundred pigs was held and more gifts were given. Another feast was held when the hull was about to be taken down to the sea for polishing with sand; some hundred men would work at this task, and the owners of the canoe made the feast. A third festival (*solevu*) took place when the two hulls were connected together with outrigger booms. These three feasts, the laying down of the keel, the polishing of the hull, and the joining of the canoes were the largest feasts. Of old as many as five men would be killed on those occasions, baked and eaten, or a woman would be brought raw (*kau ndroka mai*); some handsome young men or some one against whom the owners had a grudge would be enticed to Kambara, killed and eaten. When the second Tui Naiau's eldest son's canoe was built, Lemaki heard the herald in offering up the feast apologize that he had not brought a man to eat or a raw woman "for Christianity," he explained "spoils our feasts and bars the way." 396● 431 574

I could discover no charms to make a canoe strong or lucky; but certain tapu had to be observed; 396 184

No woman might touch the canoe or she would have to pray for mercy with gifts and a feast; a woman might not embark on it while it was a "new canoe" until a ceremony had been performed. No one might eat on board until kava had been made on board the canoe. This was called "eating on account of" (or sitting across) (*kana mbaleti*), and was sometimes held in Lakemba, in which event no one was permitted to eat or smoke on the journey to Lakemba; but sometimes it was performed in Kambara to enable the crew to eat on the way.

When the canoe arrived in Lakemba a big feast and much stuff was prepared. The Lemaki offered up to the chief who was sitting at kava the bailer of the canoe, as a sign of ownership. A man with a good voice proclaimed the canoe in the center of the village, so that the people might know of it. Then a lady (*ngone marama*) young or old, was chosen to embark on the canoe. Bark cloth was wrapped around her waist until she could not walk and had to be carried aboard, followed by the other women also heavily wrapped. They all left their dresses on board; sometimes enough to fill two houses. This ceremony was called embarking on the canoe (*vondoki a waqa*). 396 574

2: Thompson E-5 (1933-1934)1940 OQ6 Lau OQ6
Kambara

The coil is boiled in the dye mixture for about 10 hours and then soaked in a container for about 12 hours. It is then left for about 24 hours in a container with soft black mud, washed in fresh water, and hung out in bundles to dry. When boiled the black dye fades slightly. Yellow sennit is made by boiling a coil with scraped *kura* roots for two hours.

Canoes

I witnessed the process of construction, of sailing, and of paddling canoes on the islands of Kambara, Fulanga, and Ongea. Information concerning navigation was obtained on six interisland canoe trips in good and bad weather over a distance of 200 miles. Information concerning the double canoe was obtained from many old informants who had participated in their building and sailing. Much of it was furnished by Tatchini, the *lemaki* carpenter of Kambara. No complete double canoe is found in Lau today. But on Fulanga I examined parts of a small *sauthoko* constructed by Mathiu, the carpenter of Nasava, a chiefs' carpenter clan of Muanaithake, and on Levuka, Lakemba, a model *sauthoko* constructed by the same carpenter.

Two types of canoes, the single sailing canoe (*thamakathu*; pl. 5, *A, B*) and the paddling canoe (*wangga vothe*) are still made and in constant use in southern Lau. Both have single indirectly attached outriggers. The sailing canoe is a five-piece, completely decked canoe equipped with mast and lateen sail. The paddling canoe is either a simple dugout or a dugout with decked washstrakes. Only large sailing canoes are used outside the reef.

Informants say that formerly an outrigger canoe, called *ndavilai*, was also made. It resembled the *wangga vothe* but head and stern were of equal size and shape.

Two types of double canoes (*ndrua*), the *sauthoko* and the *tambetembete*, were formerly built in southern Lau. The *sauthoko* consisted of two built-up, decked canoes; the main canoe (*kata*), and the balancing canoe (*thama*), which served as outrigger. The *tambetembete* was a plank canoe with a keel said to have been introduced and built by the *lemaki* carpenters and the Tongan carpenters, who came to southern Lau for greenheart timber. Double canoes were used in interisland voyages in Fiji and between Fiji and Tonga.

Informants say that a raft (*ulatoka*), composed of logs lashed together with sennit, was formerly built to carry heavy loads. The *ulatoka* is mentioned by Williams (27, vol. 1, p. 76), and a model of an *ulatoka* in the Fiji Museum has been described by Hornell (16, p. 332).

Canoe making is today, as in the past, the most important industry in southern Lau because hard greenheart timber, used for hulls of double and large single sailing canoes, grows abundantly only on the forested, limestone island of Kambara and to some extent on Fulanga, Ongea, and Wangava.

2: Thompson E-5 (1933-1934)1940 OQ6 Lau OQ6
Kambara

396 Canoes from southern Lau were used by chiefs throughout the Fiji islands and in Tonga where there is no hardwood. Tongan chiefs sent their own carpenters and workmen to Kambara and Fulanga where they lived for two years or more building large double canoes to be used in Tonga.

According to informants, the last double canoe was made in Kambara about 30 years ago. However, large sailing canoes and paddling canoes are still made. Since the fall of the copra market large sailing canoes have provided interisland transportation.

SAILING CANOE

501 [651 439] Large sailing canoes (*thamakathu*) are one of the most valuable objects of ceremonial exchange made in southern Lau. They are paid as tribute to high chiefs at Lakemba, who in turn frequently present them in ceremonial exchanges to chiefs of Viti Levu.

Canoe census

Thirty-two large, seaworthy, sailing canoes on the islands visited were distributed as follows: Fulanga 11, Kambara 8, Ongea 7, Mothe 6, Namuka 0. On Kambara the distribution between villages was Tokalau 1, Lomatchi 2, Undu 2, Nggalinggali 3. Many partly hollowed hulls, abandoned during construction, were seen rotting in the bush; and old, broken hulls were seen in all villages.

Navigation

502 A well-built Lauan sailing canoe is a seaworthy and swift craft. In a stiff breeze she easily attains a speed of 10 knots an hour. She sails best with the wind just off the stern but cannot sail directly before the wind, because the outrigger must be kept to windward. In stormy weather the man who holds the sheet watches the outrigger and the sail constantly. If he does not slacken the sail at a gust, the float rises out of the water and the canoe is in danger of capsizing. If the outrigger swings to leeward, the float is forced under water and the canoe swamps. Care is taken to balance the load on a canoe by favoring the outrigger side. If the load is unbalanced the canoe capsizes; if it is too heavy, the canoe sinks. Loads are often thrown overboard. A capsized canoe is righted by the crew and bailed out, and the journey is resumed.

If the wind is very strong the sail is lowered while a reef is taken in the foot of it. In dangerous gales the sail is lowered, rolled, tied, and adjusted to the mast in order to catch the wind. A canoe with lowered sail so adjusted makes 4 knots an hour in a gale. Lauan sailors say that a mat sail is better than a canvas one for the mat allows the wind to pass through and therefore the mast is not easily strained or broken.

2: Thompson E-5 (1933-1934)1940 OQ6 Lau OQ6
Kambara

502 however, be the orientation of a canoe if the outrigger were on the port side, the usual position in Lau.

For further details concerning *thamakathu*, called *thamakau* in Mbauan, see Hornell (16, pp. 307-319).

Construction

●396 The construction of a large sailing canoe requires planned economy on the part of the builder and his clan and the cooperative labor of his whole village. It extends over a period of several months. The builder and his clan must raise enough food to provide daily feasts for the workers and gather enough property to make the final payment to the carpenter.

396 313 [824] **Canoe body.** The builder selects a tree for the hull of greenheart, *mbau*, or *makota (Dysoxylum richii)* wood. Canoes of greenheart are the strongest and the most durable. The trunk must be straight, large, and sound, and it must not be too far from the beach and the village. A sailor is always looking for good canoe timber and often stops on a trip through the jungle to examine a tree. Standing at the base and facing the tree, he sights up to the crown to determine the curve of the trunk and its suitability for a hull.

[412] When the tree has been marked by cutting off a piece of bark with a knife, the builder procures the services of a carpenter, usually from his own village. If he is an influential man, he makes an initial payment of property (*mbutombuto ni wangga*) to the carpenter before the work begins. Formerly a builder from another Lau island or from Tonga made an initial payment of at least two whales' teeth.

396 313 483 [412] When sufficient food for the first series of feasts has been collected, a day is set for felling the tree. Early in the morning the men of the village go to fell the tree. Under supervision of the carpenter the tree is felled close to the ground by means of metal-bladed adzes. Before the crown is cut out wooden rollers are shoved under the trunk. A feast prepared in a temporary earth oven in the jungle is provided by the builder and his clan at about midday. The men meet again on an appointed day to continue the work. With great effort the trunk is rolled over into the position the finished canoe is to take. Two strong saplings, about 3 meters long, are staked near the middle and athwart the trunk on the side from which it is to be rolled. The stakes are lashed to the log with *wangiri* and split *viavia* vines. Wedges of wood are then forced between the log and the stakes to make the vines taut. Two *kaudrangi (Smilax vitiensis)* vines are tied near the base end of the trunk and one near the head. All the men except the builder take hold of these vines and prepare to pull. The builder, grasping the roller under the base of the trunk, cries rhythmically, "Folo, folo, folo, folo! I tuo!" At the last two words the men pull, the builder raises the roller, and the trunk rolls over.

[824]

2: Thompson E-5 (1933-1934)1940 OQ6 Lau OQ6
Kambara

396 313 483

The ends of the trunk are carefully examined, and if either shows any sign of decay it is gashed for removal.

396

Sailing canoes to be used outside the reef usually measure from 8 to 12 meters long. Following a vine marker held taut at the base and head ends of the trunk, a man cuts two longitudinal lines in the bark with an adz to mark the opening of the hull. A series of short parallel lines a foot apart are cut at right angles to and joining the two longitudinal lines. The bark of the series of small triangles thus formed is removed and the trunk is leveled between the two edges of the hull. Leafy saplings are thrust into the ground near the log to shade the workers from the sun. A steamed feast is served at noon.

396 483 [401]

The hull is roughly shaped and hollowed in the forest. The upper part of the trunk forms the stern, which is truncated with shield-shaped butt. The base forms the head or bow, which is deep and pointed. When it has been lightened sufficiently it is hauled on rollers to the beach, a very difficult process which I witnessed on Kambara. A pathway through the bush is cleared by burning the brush. Rollers of *sielavu* or other wood are spaced about 6 meters apart along the path for a distance of about 20 meters. One end of a heavy vine (*kandrangi*), about 7 meters long, is knotted to the center of a beam of *mauamaua (Homalanthus nutans)* or other wood which is inserted lengthwise into the stern end of the hull. Sticks of *tapo* are fitted and beaten in athwart the hull above the beam to hold it in place. The stern is wrapped with beaten *walaki (Flagellaria gigantea)* vines. Grasping the *kandrangi* vine, the men haul the hull over the rollers. They place it on the last two and rest while the other rollers are carried forward along the path and the hauling is resumed. When they reach the beach the hull is floated to the village, where it is finished. The hull is placed on two rollers and a temporary shelter (*yalavolau*) (p. 173) is built over it.

[824]

396 284

When the hull is finished, the washstrakes (*sai*) are added. They are lashed to the hull with sennit drawn through a series of holes (*nggara ni vakovako*), drilled along the upper edge of the hull and the lower edges of the washstrakes. The process is called *mbau vau*. A long narrow strip (*kapikapi*) of greenheart, *mbau*, or *vaivai* is inserted between the hull and the washstrake. Under the *kapikapi* is pushed a calking of tapa, coconut fiber, canvas, or cloth. The *kapikapi* is held in place while the lashing proceeds. Starting inside the hull, a piece of sennit is threaded two or three times, out through one hole in the hull and in again through the corresponding hole in the washstrake. It is then looped through the lashing and the process is repeated two or three times depending on the size of the canoe and on the sennit. The original end of the sennit is held fast by the lashing against the hull wall. The sennit is pulled tight and carried to the next pair of holes,

2: Thompson E-5 (1933-1934)1940 OQ6 Lau OQ6
Kambara

396 which are lashed in the same way. Before proceeding to the third pair of holes the sennit is looped backward and knotted through the sennit carried 284 from the first hole. The holes are calked with coconut fiber plugged in with [401] a wooden wedge and hammer.

Head- and stern-boards (*mua levu* and *mua lailai*) are hewn from solid 396 *mbau vuntchi*. They are fitted over the entire fore-and-aft parts of the hull and are lashed to it in the same way as the washstrakes. The head-board of large canoes is decorated with simple ornamental carving (fig. 6, *a*, *b*).

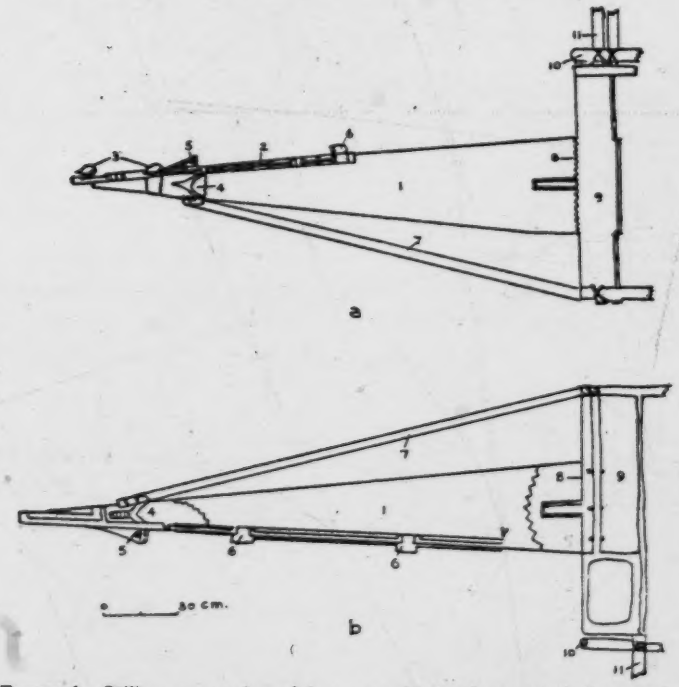

FIGURE 6.—Sailing canoe, plan of bow. **a**, with outrigger attached to starboard; **b**, with outrigger attached to port: 1, head-board; 2, ornamental carving; 3, cowry shells; 4, yard socket; 5, stay hole; 6, guard projections covering horizontal leads; 7, diagonal strut connecting head of hull with lee corner of deck platform; 8, breakwater; 9, deck; 10, stringer; 11, outrigger boom.

Outrigger attachment. The weight, size, and attachment of the float (*thama*) is of utmost importance, for the chief problem in rough weather sailing is to maintain the balance and prevent the float from sinking. The outrigger is attached to the port side of the canoe except in canoes built by

2: Thompson E-5 (1933-1934)1940 OQ6 Lau OQ6
Kambara

the *lemaki* carpenters, who attach it to the starboard side. The float consists of a rounded log of light wood with flattened upper surface and pointed ends. It is little more than half the length of the canoe and is attached indirectly to it by means of over-crossed stick connectives (*vatoto*). On Kambara breadfruit wood is preferred for the float, on Ongea *ngandoa* is used.

The booms (*i kaso*) of breadfruit wood, run athwart the canoe from the edge of the deck opposite the outrigger toward the float. They rest in squared sockets cut out of the upper edge of the washstrakes and are tied with sennit to the washstrakes through two holes drilled in the washstrakes below each socket. The holes are usually drilled on the same horizontal plane, along one line of the grain. On a few canoes they are on different planes and therefore stronger, for the wood of the washstrake is less likely to split. The three primary booms, longer and thicker than the secondary booms, are placed at each end and in the middle of the washstrakes. They extend a few centimeters beyond the float and are indirectly connected with it. The secondary booms, placed between the primary booms, extend to the outermost stringer and are not connected with the float. The number of secondary booms varies according to the size and strength of the canoe (fig. 7).

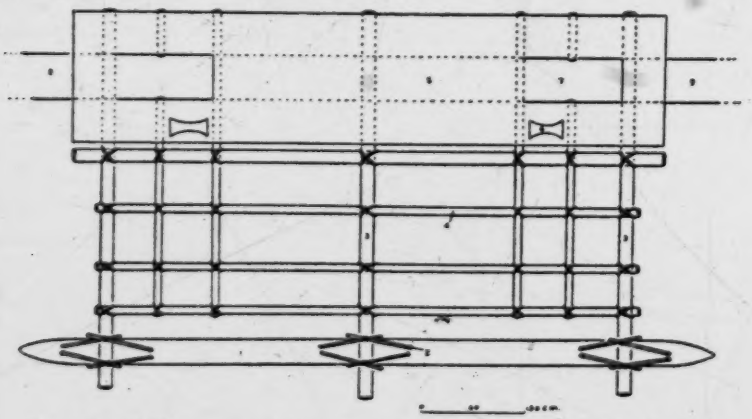

FIGURE 7.—Sailing canoe, outrigger plan: 1, float; 2, stick connective; 3, outrigger boom; 4, stringer; 5, deck; 6, hole for scull; 7, hatch; 8, head-board; 9, stern-board.

The float is attached to the three primary booms by means of six pairs of overcrossed stick connectives, two pairs to each boom. The pointed lower ends of the connectives are hammered into the float. The upper ends are crossed over the booms and lashed together in pairs. To reinforce the attachment on large, well-built canoes secondary stick connectives (*lengge*) run from the float below each primary boom to the outermost stringer.

2: Thompson E-5 (1933-1934)1940 OQ6 Lau OQ6
Kambara

396 [284] Stringers (*kaiakisa*) are placed above the booms and securely lashed to them with sennit at every intersection. This lashing must be renewed often. The innermost stringer is thicker and stronger than the rest.

Deck. Breakwaters are inserted between the ends of opposite washstrakes. A deck of planks, built over the boom, covers the space between the washstrakes and extends beyond them on both sides. The rectangular hatch at each end is closed with planks in rough weather. Hourglass-shaped holes for the scull (*i sua*) are cut in the deck between the hatches and the outrigger. The scull is a long, slender oar, two thirds of which is manipulated below the deck. A well equipped sailing canoe has two sculls.

Two struts, one lashed to the fore corner of the deck platform opposite the outrigger, the other to the aft corner, extend to and are lashed to the tip of the head and stern boards respectively. On large, well-built canoes a low wooden rail (*koli*) is built along the edge of the deck opposite the outrigger side.

Mast, rigging, and sail. The mast (*i vana*) is a straight pole of *ndamanu* wood which tapers toward the head. Its length equals at least half the length of the canoe. It is topped with a masthead of greenheart. Either of two types of mastheads are used. One has a mast-prong, shaped like a crab's claw, [177] through which the halyards (*vakavakarewa*) are rove. The other has a truck (fig. 8) which the natives say is recent. Trucks, however, are shown by Williams (27, vol. 1, fig. opp. p. 88). The truck aperture is called *nggara ni vakavakarewa*. The mastheel is either stepped in a circular hollow cut in the deck amidships or it is pivoted in a solid socket (*vunga*) fitted to the deck at the same place.

[439 283] The rigging is usually imported rope, which is considered stronger than the native twist. The standing rigging consists of two shrouds, one forestay, and one backstay. The upper shroud (*i lomba levu*) and the lower shroud (*i lomba lailai*) run from the masthead to the central boom above the float. The forestay (*i tuku ni mua levu*) and the backstay (*i tuku ni mua lailai*) run from the masthead to the stay holes (*nggara ni tuku*) on the edge of the head and stern boards.

A curved mast-shore (*vangga loa*) extends from the lower part of the mast to the outer part of the central boom.

[285] The sail (*i latha*) is of the Oceanic lateen type. It is made of strips of pandanus matting sewn together with a sail needle (*saulatha*) threaded with sennit. Informants on Kambara say that besides pandanus, *kuta (Elaeocharis articulata)* was formerly used for making sails. *Kuta* does not grow on [439] Kambara. It was brought in long rolls about 65 cm. wide from Viti Levu and cut and sewn into sails on Kambara. The margins of the sail are turned down and sewn with a bolt rope composed of sennit. The head and foot

2: Thompson E-5 (1933-1934)1940 OQ6 Lau OQ6
Kambara

The head and foot
are tied to two spars, the yard (*vu*, forefather) and the boom (*alewa*, woman). At the tack of the sail the yard is stepped in a socket (*tutu ni vu*) on either the head or the stern board, and the forked end of the boom is fitted to the yard. The attachments *vu* and *alewa* are phallic symbols.

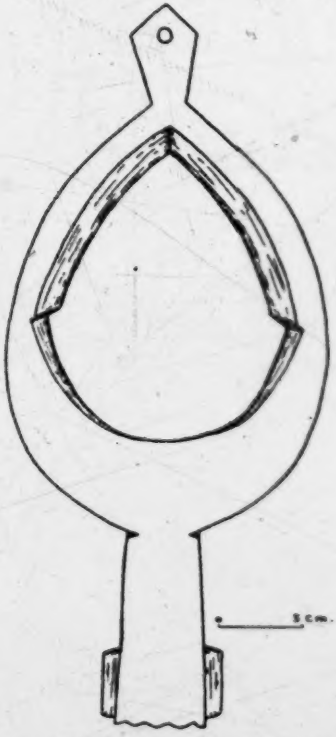

FIGURE 8.—Sailing canoe mast truck from Fulanga.

One or two halyards (*vakavakarewa*) are tied to the yard at a point about two thirds of the distance from tack to peak, and the sheet (*sila*) is attached to the boom at a corresponding point two thirds of the distance from tack to inside of timberlake.

To raise the sail the halyards are drawn over or through the mast-prong or the aperture in the masthead and made fast to a cleat at the foot of the mast. The sheet is twisted around an inner stringer and held by one of the crew. If the wind is fair and constant it may be tied to a stringer. Furling the sail is shown in plate 5, *A*.

[of the sail.—Analyst]

12: Thompson E-5 (1933-1934)1940 OQ6 Lau OQ6
'Kambara

396 The canoe is steered with a heavy, long-bladed steering paddle (*uli*) made from greenheart inserted between the deck and the innermost stringer. It is attached to the canoe by means of a rope tied to two holes in the upper end of the blade. A large piece of coral tied with rope is used as an anchor. The [415] wooden bailer is the typical Oceanic scoop with handle within the cavity of the scoop.

[531 622] **Shell ornamentation.** Fine canoes belonging to members of the nobility are often ornamented with cowry shells lashed to the tip of the head-board, the masthead, or the outrigger. Formerly shells were used only on canoes belonging to chiefs.

504 **Repair.** Holes or cracks in the hull are repaired by inserting a wooden patch inside the hull and calking the seams with *yangai* pitch made soft with a glowing brand. Ongea men are said to be skilled in canoe repair work. Nearly every Ongea canoe shows a crack at one or both ends due to the inferior timber found on the island.

396 **Launching.** When a canoe has been completed a large feast (*solevu ni wangga*) is held by the builder and his clan for the carpenter. Whales' teeth, barkcloth, mats, or sennit are presented ceremonially to him. Kava is made and food is eaten by the owner on the deck of the new canoe. Eating and drinking on the canoe are forbidden until this ceremony lifts the tabu.

396 526 At the launching of the canoe a race (*rova*) is held. The owner provides barkcloth and occasionally mats and oil. These are suspended to poles held upright by young girls. The young men gather at some distance from the girls who sing rhythmically:

Toro, toro tchikau, toro voli yani tchikau.	Move, move from there to here.
Vaka vaka o! Rova pu!	Ready, go!

At the last two words the racers start running toward the girls. The winner gets all the property he can carry. The remainder goes to the carpenter. On this occasion the canoe is named, often for a child of the owner. Canoes are [552 765] known by their names. A canoe is occasionally a memorial to the dead (*lawa ni mate*—sail of the dead).

[504] The completed sailing canoe is not housed in a shed but is beached and covered with coconut leaves or sheltered under a leafy tree.

PADDLING CANOES

501 Paddling canoes, like small sailing canoes, are used inside the reef for fishing, turtle hunting, and intervillage transportation. On the island of Namuka where the art of sailing canoes has been lost, paddling canoes are still used for fishing in the lagoon. They are poled in shallow water. They are built of local wood on practically every island and are usually smaller,

2: Thompson E-5 (1933-1934)1940 OQ6 Lau OQ6
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lighter, and less finished than sailing canoes. They are built quickly without ceremony unless the owner wishes to have a small race (*rova*) at the launching. 501

There are two types of paddling canoes in Lau, the *velovelo* and the *wangga vothe*. The single dugout type called *velovelo* is not often seen. It is more suited to river than to lagoon use. One at Undu, Kambara, consisted of a dugout of *makota* about 6 meters long cut according to the usual canoe hull pattern. It had low washstrakes resembling stringers, 3 primary and 2 secondary booms crossed by 4 stringers, and a short float joined to the booms by 6 pairs of stick connectives, 2 pairs to each primary boom. This type of canoe is used on the rivers of Viti Levu and called *takia*, according to Hornell (16, pp. 304-306). [171]

The built-up dugout type of paddling canoe, called *wangga vothe*, is common in Lau. One in use on Fulanga consisted of a dugout of *makota* 5.75 meters long, washstrakes 15 cm. high, 3 booms, 3 stringers, and a float joined as in the *velovelo*. This type of canoe is called *wangga vakatau* on Viti Levu, according to Hornell (16, pp. 306-307). [171]

DOUBLE CANOES

Sauthoko

The construction of a large, double canoe of the type called *sauthoko* took at least two years and involved elaborate feasts and ceremonies. Only a chief could command the resources and labor necessary to build one. When a Lauan high chief wanted a double canoe built he sent instructions and property to his carpenter on Kambara or another one of the timber islands in southern Lau. The carpenter had charge of the construction of the canoe, and he selected the timber and picked his assistants. A large trunk of greenheart was used for the large canoe, *mbau* for the small one. On the day of felling the tree a great feast called *mangitchi ni vaka mbale* was held in the bush. The series of feasts were *mangitchi ni vanua* (feasts of the land) provided as tribute to the chief by the people of the island. In construction the *sauthoko* resembled a very large *thamakathu* with a small canoe of the same type used instead of a float. The hull was shaped, turned, and hollowed as a sailing canoe is today, except that more labor was involved. The work was done with stone adzes. To hollow the hull first a heavy adz (*vula ono*) was used, then a short handled, thick adz (*i kotchi*), then a lighter adz (*valevatu*). The finishing was done with an adz which could be turned on the haft. 501 396 [412]

While hauling the hull to the shore the men sang rhythmically: [539]

Unga e! Unga e!
E nggasi ki sau una ko unga
Unga e! Unga e!

Land crab e! Land crab e!
Land crab crawls like an old man
Land crab e! Land crab e!

2: Thompson E-5 (1933-1934)1940 OQ6 Lau OQ6
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501 When the hull reached the shore a large feast was held. The hull of the small
396 canoe was prepared in the same way. Next the head- and stern-boards were constructed. The two canoes were connected by booms called *i kaso*. If the double canoe was built by a *lemaki* carpenter the small canoe (*thama*) was attached on the right of the large canoe (*kata*). A wide deck was constructed over the booms and a small canoe house (*vale wangga*) was built on
[354] deck. A fireplace (*mata ndravu*), at the end of the canoe house toward the stern, was shifted according to the tack. It consisted of a large hollow block of *puko* wood or a large kava bowl. Sand or clay was placed in the hollow, then earth oven stones. A wood fire was built on the stones and removed when they were hot. Food wrapped in green leaves (banana, breadfruit, or *ruevu*) was placed on the hot stones and covered with leaves.

While the canoe was under construction it was tabu for any person unaccompanied by the carpenter to look at it. If the tabu was broken the offender had to make atonement (*ore*).

A Fijian double canoe of the *sauthoko* type, belonging to Percy Turner of Suva, has been described by Hornell (16, pp. 319-324).

A great feast was held at the launching of a double canoe. The chief, standing on the float, directed the race. Then the carpenter presented property consisting of woodwork collected from his clan, together with the canoe itself, to the chief. This was called *musu wangga*. In return the chief gave craft articles, a piece of land, or a woman to the carpenter.

On the double canoe parts of the deck called the *nggela tambu*, the *thaku*
[622] *tamba*, and the *vale wangga* (canoe house) were reserved for the chief. A chief's canoe carried a flag of *masi* attached to the yard.

Tambetembete

501 Double canoes exceeding the length of a single tree (at most about 13 meters) were made of planks built up on a keel. This type was called *tambetembete*. None is found in Fiji today, but a double canoe believed to be of the *tambetembete* type is described and illustrated by Williams (*27*, vol. 1, pp. 73-76, fig. p. 86).

An old informant, Semitchi of Mbutonikoro, Mothe, told me of a *tambe-*
[731] *tembete* double canoe called Tangimautchia. It was built on Fulanga just before the measle epidemic in 1875 by Setareki, *matai* (carpenter) *Yalona*, from Tonga, for Tupou, a Tongan chief. Tupou remained in Tonga and sent his herald, Hala Hafihafi, to Fulanga. Hala Hafihafi and his wife and children remained on the island during the two years required to construct the canoe. The *tambetembete* was of greenheart with mat sail. Semitchi, who was about 16 years old at the time, was a member of the crew which sailed her to Tonga. Ten of the crew were Tongans. There were about 25 men and women aboard. The canoe carried a load of mats from Fulanga. They sailed north-

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Gaming Grounds

A long shallow ditch (*rara ni tchingga*), called Wainikeli, which the natives say was formerly used for the dart game (*tchingga*), was examined in east central Wangava. The site has been described on pages 78-79. 172

Canoe Builders' Pit

On the beach at Naimarai, reputed to be the site of a village located on the northeast coast of Kambara and formerly occupied by Tongan canoe builders, is a pit which informants say was used in building double canoes. The rough hull was drawn across the mouth of the pit so that the canoe builders could stand conveniently in the pit while building up and finishing the hull. This was probably used especially for the *tambetembete* type of Tongan double canoe with keel. 172 396

Fishponds

On Mothe fishponds bordered by walls of basaltic stones were seen. These have been described on pages 135-136. 172

Cannibal Earth Oven

The site of an earth oven which informants said was formerly used for steaming human bodies (*lovo ni mbakola*), was seen near Undu village. It consisted of a somewhat circular pit in the ground, larger than the usual pit used to steam food for a feast. [354] [266]

Shell Mounds

An extensive, low shell mound, formed of the shells of edible mollusks, was seen on the shore at Yawalevu, Fulanga. The edge of the mound was used for a sweet potato garden. By pushing aside the shells which covered the surface of the ground and scraping the earth below into a mound, a small circular clearing had been made for each sweet potato plant.

Potters' Clay Site

The natives of Kambara say that potters' clay was formerly obtained from Matanimoko at the foot of Ndelaioloi near Lomatchi. It was made into pots by the women of Levuka, Lakemba, when they visited the island on regular trading expeditions. The women of southern Lau were not potters but obtained their pots from the Levuka women, from Matuku, Kandavu, and Tailevu (24, pp. 111-112). [323] [438]

Stone Quarries

It is probable that sites of quarries, which formerly supplied basalt for the manufacture of stone implements used in southern Lau, occur on the volcanic islands but none was located. [324] [316]

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ADZES FROM THE LAU ISLANDS, FIJI.[1]

BY LAURA THOMPSON, Ph.D., HONOLULU.

439 396 824 322 DURING the 18th and 19th centuries the southern Lau islands, located between Fiji and Tonga, were the centre of the canoe-building industry for the whole of Fiji, and the Tonga islands as well. The valuable greenheart of India, a hardwood called *vesi* (*Intsia bijuga* [Colebr.] Ktze.) grows well on the islands of Kambara, Fulanga, Ongea, and Wangava, and it is found nowhere else in Fiji or in Tonga. Moreover other hardwoods such as *mbau* (probably *Pittosporum Brakenridgei*) also grow well on the densely-forested plateaus of the limestone islands of southern Lau. Hence in these islands is found a development of carpentry and a specialization in woodcrafts outstanding in western Polynesia, and the Lauans are known throughout the area for the superiority of the materials and the execution of their woodwork. Besides large canoes, they produce a variety of wooden bowls, gongs, headrests, digging-sticks, and houseposts. Formerly they made clubs and spears as well.

396 439 174 The procuring of hardwoods was largely responsible for the interest of the Tongans in the Lau islands, especially in the 18th and 19th centuries. Tongan chiefs sent their own carpenters and assistants to southern Lau to build large, double war-canoes and often went themselves to supervise the work, which required at least two years for completion. Trade flourished between the Lauans and the Tongans, and

[114]

[1]The following description is based on a study of 44 specimens from the southern Lau islands, Fiji, in the Bernice P. Bishop Museum, Honolulu. I wish to thank Dr. Harry S. Ladd for indentification of stone specimens, Dr. A. C. Smith and Dr. Harold St. John for indentification of native plant-names, and Mr. Kenneth P. Emory for criticism of this study. This study is part of the results of a field trip to the Lau islands in 1933-34, made possible by a Bernice P. Bishop Museum fellowship.

[p. 97]
(pp 1-96 not processed)

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the colonies of Tongans which sprang up in Lau had a marked effect upon the Lauan culture and race.[2]

The use of hardwood and the high development of carpentry account for the large number and range in size of the cutting-implements found in southern Lau.

Blades of stone and shell are no longer used as cutting-implements in Lau. They have been replaced by metal tools, hafted according to the old patterns, but many old implements are found in archaeological sites. Some are used today by the natives for *ivi* (*Inocarpus edulis* Forst.) nut-crackers or earth oven-stones.

Most of the stone cutting-implements are carefully made of selected, fine-grained basalt. They have been either pecked or chipped into shape, and all surfaces have been ground, and occasionally polished. A few specimens are composed of resistant sandstone, which is almost quartzite. All basalt implements found on the limestone islands such as Fulanga, Ongea, Wangava, and Namuka, have been imported from volcanic islands, probably chiefly from Komo, Lakemba, and Kambara (composed of limestone with a volcanic outcrop).

Stone Adzes[3]

The stone adzes have been classified according to cross-section into four types:— circular, elliptical, trapezoidal, and rectangular.

Circular Type

Fusiform adzes with circular cross-section are grouped as the circular type. (See Pl. A, 1 and fig. 1). There are a large number of adzes of this type in the collection. They narrow toward the pole, which is slightly flattened, and toward the edge, which is slightly curved and narrow, except when the adze has been worn down by sharpening of both

[2]For further information concerning the Tongans in Lau see my "Kulturgeschichte der Lauinseln (Fidschi gruppe)," *Archiv für Anthropologie* vol. 76, 1937.

[3]The terminology used in this study follows Buck, Emory, Skinner, and Stokes, "Terminology for ground stone cutting-implements in Polynesia," *Journal of the Polynesian Society*, vol. 39, no. 2, 1930.

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361 [161] of the four, on the east side, a little north of the middle, with 180 residents. A trail leads across the basin from the latter to the 487 241 garden areas, which seem to be cultivated jointly by the people of the three northern villages.

With the extensive timber at hand, the natives of Kambara have 396 322 long been noted for their canoe and boat building as well as for various kinds of carving.

13 This is the largest of the dominately limestone islands and would be well worth concentrated collecting.

[p. 35]